



# Critical Habitat for Freshwater Mussels in the Tennessee and Cumberland River Basins

Steve Bakaletz, NPS



*Cumberland elktoe*

Robert Taves, USFWS



*Cumberlandian combshell*

Dick Biggins, USFWS



*purple bean*

Steve Abstedt, USFWS



*rough rabbitsfoot*

Dick Biggins, USFWS



*oyster mussel*

## Why is the U.S. Fish and Wildlife Service now considering the designation of critical habitat for several freshwater mussels in the Tennessee and Cumberland River Basins?

In a final rule issued in 1997, the U.S. Fish and Wildlife Service listed five freshwater mussels under the Endangered Species Act (ESA) and made a finding that designating critical habitat was not prudent.

On October 12, 2000, the Southern Appalachian Biodiversity Project filed a lawsuit against the Service, challenging the “not prudent” determination. On November 8, 2001, the United States District Court, Eastern District of Tennessee, ordered the Service to reexamine its prudency determination for these five mussels, propose a new one, and consider proposing a new critical habitat designation to the Federal Register by no later than May 19, 2003. In compliance with the court order, the Service is currently assessing the best scientific and commercial data available to evaluate critical habitat for each species.

## What is critical habitat?

Critical habitat is a term used in the ESA to refer to specific geographic areas that are essential for the conservation of a threatened or endangered species and that may require special management or protection.

## What does “consult” mean?

Consultation is a process by which Federal agencies use the Service’s expertise to evaluate the potential effects of a proposed action on ESA listed species and their critical habitats. Consultation may also identify alternatives to the proposed action to avoid adverse effects on listed species and their habitats.

## What is the impact of designating critical habitat on private lands and private landowners?

The designation of critical habitat is applicable to Federal activities that are funded, permitted, or carried out by a Federal agency. These activities all require consultation with the Service.

## How does the Service determine what areas to designate as critical habitat?

The Service considers physical and biological habitat features that are essential to the conservation of these species, including:

- space for individual and population growth and for normal behavior;
- cover or shelter;
- food, water, air, light, minerals or other nutritional or physiological requirements;
- sites for spawning and rearing offspring; and
- habitats that are protected from disturbances or are representative of the historic geographical and ecological distribution of a species.

## U.S. Fish & Wildlife Service Freshwater Mussels Fast Facts

### *Common and scientific names*

Cumberland elktoe (*Alasmidonta atropurpurea*), Cumberlandian combshell (*Epioblasma brevidens*), purple bean (*Villosa perpurpurea*), rough rabbitsfoot (*Quadrula cylindrica strigillata*), oyster mussel (*Epioblasma capsaeformis*).

### *Status*

All five mussels were listed as endangered together on January 10, 1997.

### *Description*

Mussels are bivalve mollusks, which means that they have two valves (shells) surrounding a soft fleshy body. Freshwater mussels are related to snails, oysters, clams and squids.

### *Habitat*

Mussels live in the sand and gravel bottoms of streams and rivers. They require good water quality, stable stream channels and free flowing water.

### *Diet*

Mussels filter their food out of the water. They eat algae, detritus, other small plants and animals and other microorganisms.

### *Life history*

The larvae of these mussels attach on the gills of freshwater fishes, including darters, shiners and sculpins. The larvae use the host fish for dispersal and cause them little to no harm. Many mussels attract host fish by mimicking lures, minnows, worms, leeches or aquatic insects.

### *Natural enemies*

Some species of fishes and turtles, as well as muskrats, raccoons and otters feed on mussels.

### *Threats to survival*

Habitat modification through man-made structures like dams and channel alterations have destroyed free-flowing water habitats. These modifications restrict many mussels from dispersing.

This results in small, isolated populations. In addition to habitat modifications, mussel populations are exposed to point source pollution and nonpoint source pollution (toxic runoff containing fertilizers, herbicides and pesticides from land use practices).

## Do listed species in critical habitat areas receive more protection?

No. Listed species are already protected through the ESA's prohibition against take whether or not they are in an area designated as critical habitat. Take may include harm to the habitat if the action actually kills or injures wildlife significantly impairing essential behavior patterns, including breeding, feeding, or sheltering.

## Does a critical habitat designation affect all activities that occur within the designated area?

No. An area designated as critical habitat is not a refuge or a sanctuary for the species. Activities that involve a Federal permit, license or funding and that may affect critical habitat will require consultation. Most activities such as recreational boating, canoeing, swimming, fishing and commercial boat traffic would not involve a Federal action that may affect critical habitat and therefore would not trigger a consultation requirement.

## Must Federal agencies consult with the Service even where critical habitat has not been designated?

Yes. Even when and where there is no critical habitat designation, Federal agencies must consult with the Service to ensure any action they carry out, fund or authorize is not likely to jeopardize the continued existence of a listed species. Where critical habitat is designated, a consultation also ensures that the critical habitat is not destroyed or adversely modified.

## Does the ESA consider economic consequences as a part of designating critical habitat?

Yes. Unlike ESA listing decisions, critical habitat designations require the Service to take into account the economic impact, as well as any other relevant impacts, of specifying any particular area as critical habitat. The Service may exclude any area from critical habitat if it is determined that the benefits of excluding it outweigh the benefits of including it—unless the Service determines that the failure to designate the area as critical habitat will result in the extinction of the species.

What is the impact of a critical habitat designation on economic development?

The vast majority of actions that require consultation with the Service proceed with little or no modification. The Service will complete and make available for public inspection an economic analysis that assesses impacts to economic development.

## How many species have critical habitat designations?

The Service has designated critical habitat for 162 of the 1,260 U.S. species listed as threatened or endangered.

## Who should you contact for more information?

Lee Barclay, Ph.D., Field Supervisor  
U.S. Fish and Wildlife Service  
446 Neal Street  
Cookeville, Tennessee 38501  
931/528 4281